REMARKS

The Office Action of March 10, 2003 has been received and it contents carefully considered.

Claims 8 to 11 have been rejected under the second paragraph of 35 U.S.C. § 112 as indefinite.

The Examiner states that this rejection can be overcome by changing the phrase "for electrostatic coating," to --wherein--.

In response, applicants have amended claim 8 in accordance with the Examiners proposal by replacing the term "for electrostatic coating," with the term -- wherein--.

In view of the above, applicants request withdrawal of this rejection.

Applicants have amended claim 9 to correct a typographical error.

Claims 8 to 11 have been rejected under 35 U.S.C. § 103(a) as obvious over Ueda et al and in view of Incorvia et al, Kawakami et al, EP 278500 and Seshadri.

Applicants submit that these references do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Claim 8 defines a formed resin article having an electrostatic coating film and excellent physical properties that is produced by electrostatically coating an article obtained from a specific resin composition comprised of four components (A) to (D). This formed article not only has a good electrostatic coating film, but also is excellent in physical properties, such as thermal shock resistance and mechanical strength, which are important characteristics for formed articles. The formed article is also good in dimensional stability, appearance, etc. Thus, it can

be advantageously used as a formed article having various excellent physical properties and a good electrostatic coating film, in a variety of fields, such as automobile parts.

Applicants have amended claim 8 to state that the alkali metal salt of component (D) is an alkali metal salt of dodecylbenzenesulfonic acid. The use of this salt is disclosed, for example, at page 20, line 24 to page 21, line 3 and in Examples 1 to 3 of the present specification.

Thus, the formed resin article of claim 8 is comprised of a resin composition comprised of 50 to 90% weight % of a rubber-reinforced aromatic vinyl resin (A), 5 to 50% weight % of a polyamide elastomer (B), 3 to weight 20% of a modified vinyl monomer (C) containing at least one specified functional group, and 0.2 to 5 weight % of an alkali metal salt of dodecylbenzenesulfonic acid (D).

Applicants will now discuss each of the references that the Examiner has relied on in rejecting claim 8.

Ueda et al disclose a resin composition comprising a thermoplastic resin, a polyetherester amide, and an alkali metal halide. However, Ueda et al merely disclose a resin composition excellent in heat resistance and permanent antistatic property, but nowhere describe the requirements essential to produce a formed article having an electrostatic coating film and excellent physical properties.

Comparing the resin composition used in the present invention and the resin composition of Ueda et al, differences between these resin compositions include the use of an alkali metal salt of dodecylbenzenesulfonic acid as an essential component in the present invention, while only alkali metal halides are described as alkali metal salts in Ueda et al. Ueda et al disclose at

column 4, lines 57 to 59, that sodium chloride and potassium chloride are preferred as an alkali metal salt.

In the present invention, by applying an electrostatic coating to an article formed from a resin composition containing a specific alkali metal salt, i.e., an alkali metal salt of dodecylbenzenesulfonic acid, a formed article having remarkable performance with respect to the amount and adhesion of the electrostatic coating can be obtained. In contrast, an article formed from a resin composition containing an alkali metal halide as disclosed in Ueda et al does not receive a sufficient amount of the coating when it is electrostatically coated, thereby failing to form a good electrostatic coating film. This fact is clearly evidenced in the unexecuted Declaration [Under 37 C.F.R. § 1.132] attached herewith, which employed the preferred sodium chloride and potassium chloride of Ueda et al in comparative experiments.

Experiment 1 of the Declaration shows the results of measuring the various physical properties of the resin composition described in Example 1 of the specification.

The resin composition of Experiment 3 of the Declaration was prepared in the same manner as in Experiment 1, except that sodium dodecylbenzenesulfonate was replaced with potassium chloride. The results of Experiment 3 show the various physical properties of this resin composition. The resin composition of Experiment 4 of the Declaration was prepared in the same manner as in Experiment 1, except that sodium dodecylbenzenesulfonate was replaced with sodium chloride. The results of Experiment 4 show the various physical properties of this resin composition.

When the results of Experiments 1, 3 and 4 are compared, the weight of the coating was 1.02 g in Experiment 1, 0.78 g in Experiment 3, and 0.76 g in Experiment 4. Based on these results, it can be seen that, with the use of a sodium dodecylbenzesulfonate as opposed to alkali metal halides such as the preferred potassium chloride and sodium chloride of Ueda et al, an excellent electrostatic coating film that has a large amount of electrostatically applied coating can be formed.

Ueda et al teach that a resin composition containing an alkali metal halide has a good permanent antistatic property, but do not suggest electrostatic coatability. From such a teaching, a person of ordinary skill in the art would not expect that the use of a resin composition containing an alkali metal salt of dodecylbenzenesulfonic acid, rather than an alkali metal halide, would lead to the production of an electrostatically coated article having remarkable performance with respect to the amount and adhesion of the coating.

Turning now to the Kawakami et al patent, it discloses the use of an alkali metal salt, such as dodecylbenzenesulfonate, in a resin composition containing polyamide. However, Kawakami et al merely teach that addition of an alkali metal salt or the like improves the antistatic effect, and describe nothing about electrostatic coatability.

As discussed above, when alkali metal halides are used as additives as disclosed in Ueda et al, good electrostatically coated articles cannot be obtained due to the insufficient amount of the coating received by the articles. <u>This fact reveals that excellent permanent antistatic properties do not necessarily result in excellent electrostatic coatability.</u>

Kawakami et al merely teach the use of an alkali metal salt such as sodium dodecylbenzenesulfonate to improve the antistatic effect. From such a teaching, it cannot be expected that the use of a composition, as disclosed in the present invention, containing an alkali metal salt of dodecylbenzenesulfonic acid will improve electrostatic coatability.

Therefore, applicants submit that one of ordinary skill in the art would not be led to expect, in view of Kawakami et al, that a formed article that has an excellent electrostatic coating film can be obtained through the use of an alkali metal salt of dodecylbenzenesulfonic acid in place of the alkali metal halides described in Ueda et al.

Turning now to Incorvia et al, this patent discloses the use of this patent a specific antistatic agent containing a fluorocarbon moiety and an ethoxylated ammonium moiety to enhance the receptivity of plastic surfaces to an electrostatically applied coating. Incorvia et al disclose at column 6, lines 50 to 55, that the substrates that can be used in their invention include, for example, nylon (polyamide), polycarbonate, polyphenylene oxide, polyester, polyolefins and the like, and blends with various other compatible resins. However, a material with balanced electrostatic coatability and physical properties cannot be obtained simply by adding an antistatic agent to an arbitrary resin composition.

As described above, the formed article of the present invention not only has a good electrostatic coating film, but also is excellent in physical properties, such as thermal shock resistance and mechanical strength, that are important characteristics for formed articles. This article also has excellent dimensional stability, appearance, etc. To obtain such a formed article,

it is an essential requirement for the resin composition used to have the specific makeup disclosed in claim 8, including an alkali metal salt of dodecylbenzenesulfonic acid.

The use of a polyamide resin composition containing an alkali metal salt of dodecylbenzenesulfonic acid alone does not result in an article balanced in electrostatic coatability and physical properties. This fact is evidenced in the Comparative Examples of the specification. Applicants direct the Examiner's attention, for example, to Comparative Examples 3 and 5 of the present specification and the results reported in the Table at page 33 of the specification. Comparative Examples 3 and 5 each contained a polyamide and dodecylbenzenesullfonic acid, but did not contain the specific composition of the present invention.

In the present invention, the use of a resin composition having a specific makeup enables a formed article to be obtained that is excellent in various physical properties and has a good electrostatic coating film.

Incorvia et al nowhere teach the requirements necessary to obtain a formed article that has both excellent electrostatic coatability and other excellent physical properties. Incorvia et al do not contain any disclosure or suggestion of the specific alkali metal salt of dodecylbenzenesulfonic acid recited in claim 8, or any disclosure or suggestion that this salt should be combined with the remaining specified components of claim 8. Incorvia et al disclose the use of entirely unrelated antistatic agents in compositions which are not those of the present invention, and thus do not provide one of ordinary skill in the art with any teaching or suggestion which would have led to the combination of the present claims.

EP 278500 discloses the wide use of polyamide compositions in automobile parts, but describes nothing about electrostatic coatability. Moreover, the polyamide used in EP 278500 is different from the polyamide elastomer used in the present invention, and there is no description of an alkali metal salt of dodecylbenzenesulfonic acid in EP 278500. Thus, EP 278500 does not teach the requirements necessary to obtain an electrostatically coated article with excellent characteristics.

Seshadri discloses that thermoplastic resin components used in automobile parts are commonly provided with an electrostatic surface coating to produce an attractive finish. However, Seshadri does not disclose a specific chemical makeup of a resin composition necessary to obtain a formed article with excellent characteristics.

As discussed above, to obtain an article balanced in electrostatic coatability and physical properties, it is essential to use a polyamide resin composition containing an alkali metal salt of dodecylbenzenesulfonic acid and the other ingredients disclosed in claim 8 in a specific proportion.

In contrast, the composition disclosed in Ueda et al is a composition having an antistatic property and used for purposes clearly different from those which the composition of instant claim 8 is used for. Moreover, the composition of Ueda et al does not contain an alkali metal salt of dodecylbenzenesulfonic acid, which is an essential component in the composition define in claim 8.

Ueda et al et al merely disclose an antistatic resin composition, and in no way teach or suggest a resin composition useful for producing a formed article with excellent electrostatic

coatability. Ueda et al, of course, do not teach a formed article having an electrostatic coating film.

Kawakami et al merely teach the use of sodium dodecylbenzenesulfonate to improve the antistatic effect, but nowhere suggest that the use of a resin composition containing an alkali metal salt of dodecylbenzenesulfonic acid and other specific ingredients enables a formed article of excellent electrostatic coatability to be produced.

Incorvia et al nowhere teach the requirements necessary to obtain a formed article that has both excellent electrostatic coatability and other excellent physical properties.

Neither EP 278500 nor Seshadri discloses the requirements necessary to obtain an electrostatically coated article having excellent physical properties, and neither teaches that the use of a resin composition with a specific chemical makeup is necessary to obtain an electrostatically coated formed article with good characteristics.

Moreover, Ueda et al are concerned with an antistatic resin composition, and thus there is no motivation to combine its disclosure with the disclosures of EP 278500 and Seshadri, which are not at all related to an antistatic resin composition.

Hence, even when the teachings of the cited references as discussed above are considered, applicants submit that one of ordinary skill in the art would not be led to the formed article of the present invention, which is produced by electrostatically coating an article formed from a composition containing an alkali salt of dodecylbenzenesulfonic acid and other specific ingredients, and which has a good electrostatic coating film and also have excellent physical

properties, such as thermal shock resistance and mechanical strength, that are important characteristics formed articles.

As can bee seen from the above discussion, electrostatic coatability is greatly different from antistaticity. Antistaticity may be imparted to a resin composition by improving its electrical conductivity, but in order to obtain a desirable formed article having an electrostatic coating film, a resin composition needs to be used which has not only improved electrical conductivity, but also sufficient performance with respect to the weight and adhesion of the coating. Further, the formed article is required to be good in a variety of physical properties, such as thermal shock resistance and mechanical strength. Therefore, it is necessary to use a resin composition that satisfies these properties for producing a desirable formed article having an electrostatic coating film. The conditions necessary for producing an electrostatically coated formed article with the above excellent characteristics are not predictable from the disclosures about antistatic resin compositions.

As discussed above, claim 8 defines a formed resin article excellent in various physical properties and having a desirable electrostatic coating film, the formed article being obtained by electrostatically coating a formed article produced from a specific resin composition.

In view of the above, applicants submit that the invention of claim 8, and the claims dependent thereon, would not have been obvious from the combination of the references cited in the outstanding Office Action and, accordingly, request withdrawal of the rejection of claims 8 to 11.

Claims 8 to 11 have been rejected under 35 U.S.C. § 103(a) as obvious over Fukumoto et al in view of Incorvia et al, Kawakami et al, EP 278500 and Seshadri.

Applicants submit that these documents do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Fukumoto et al disclose a resin composition comprising a polyamide elastomer, a graft polymer obtained by polymerizing monomers including styrene, etc., and a modified vinyl type polymer containing at least one functional group. Fukumoto et al further disclose that the antistatic effect can be enhanced by adding a metal salt of sulfonic acid and the like. In Example 12, sodium dodecylbenzenesulfonate is employed in an amount of 0.1 parts by weight relative to 100 parts by weight of the other components of the composition.

In contrast, in claim 8, Component D of the resin composition, i.e., alkali metal salt is limited to an alkali metal salt of dodecylbenzenesulfonic acid, and the amount thereof is also limited to 2 to 5 wt.%. When an alkali metal salt of dodecylbenzenesulfonic acid is used in this proportion, the resulting formed article acquires excellent electrostatic coatability. However, when the amount is as disclosed in Fukumoto et al, an article formed from such a resin composition does not receive a sufficient amount of coating when electrostatically coated, and a good electrostatic coating film cannot be formed. This fact is clearly seen in the Declaration attached herewith.

In particular, the resin composition of Experiment 5 of the Declaration was prepared in a manner similar to the one employed in Experiment 1, except that sodium

dodecylbenzenesulfonate was used in Experiment 5 in a proportion of 0.1 wt.%, in accordance with Example 12 of Fukumoto et al.

In comparison, the resin composition used in Experiment 1 contained sodium dodecylbenzenesulfonate in a proportion of 2 wt.%, and the resin composition used in Experiment 2 contained sodium dodecylbenzenesulfonate in a proportion of 5 wt.%.

When the results of Experiments 1, 2 and 5 are compared, the weight of electrostatically applied coating was 1.02 g in Experiment 1, 1.18 g in Experiment 2, and just 0.56 g in Experiment 5.

Based on these results, it can be understood that when sodium dodecylbenzesulfonate is used in a range of 2 to 5 wt.%, an excellent electrostatic coating film can be formed, as opposed to the use of sodium dodecylbenzenesulfonate in a proportion of 0.1 wt.% not being able to form a good electrostatic coating film due to the insufficient amount of coating received.

Therefore, it is clear that the use of the resin composition disclosed in Fukumoto et al containing sodium dodecylbenzesulfonate in a proportion of 0.1 wt.%, although an article with a good antistatic property may be formed, does not enable the obtaining of an article having excellent electrostatic coatability.

As discussed above in the rejection in which Ueda et al is employed as a primary reference, Kawakami et al merely teach the use of sodium dodecylbenzenesulfonate to improve the antistatic effect, but nowhere suggest that the use of a resin composition containing an alkali metal salt of dodecylbenzenesulfonic acid and having a specific makeup enables a formed article with excellent electrostatic coatability to be produced.

Incorvia et al nowhere teach the requirements necessary to obtain a formed article having both excellent electrostatic coatability and other excellent physical properties.

Neither EP 278500 nor Seshadri discloses the requirements necessary to obtain an electrostatically-coated formed article having excellent characteristics.

Hence, even when the teachings of the cited secondary references as discussed above are considered in addition to Fukumoto et al, applicants submit that one of ordinary skill in the art would not be let to the formed article of the present invention, which is produced by electrostatically coating an article formed from a polyamide resin composition containing an alkali salt of dodecylbenzenesulfonic acid in a proportion of 2 to 5 wt.% and other components in a specific proportion, and which has a good electrostatic coating film and also have other excellent physical properties, such as thermal shock resistance and mechanical strength, that are important characteristics for formed articles.

In view of the above, applicants submit that claims 8 to 11 are patentable over the cited references and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

8. (Twice Amended) A formed resin article having an electrostatic coating film, which is produced by electrostatically coating a resin article which is formed from a resin composition ~~for electrostatic coating,~~ wherein the resin composition ~~comprising~~ comprises 50-90 wt.% of a rubber-reinforced aromatic vinyl resin (A), 5-50 wt.% of a polyamide elastomer (B), 3-20 wt.% of a modified vinyl polymer (C) containing at least one functional group selected from the group consisting of carboxyl, epoxy, amino and amido, and 0.2-5 wt.% of ~~at least one alkali metal salt (D) selected from the group consisting of potassium thiocyanate and~~ an alkali metal salt of dodecylbenzenesulfonic acid (D), based on 100 wt.% of a total amount of four components (A)-(D).

9. (Amended) A formed resin article according to claim 8, wherein the rubber-reinforced aromatic vinyl resin (A) is a graft copolymer obtainable by polymerizing monomer components (a-2) in the presence of a rubber polymer (a-1), or a mixture of said graft copolymer and a copolymer of the monomer components (a-2), the monomer components (a-2) comprising (i) an aromatic vinyl monomer, (ii) ~~,~~ at least one monomer selected from the group consisting of a vinyl cyanide monomer and an alkylester monomer of unsaturated carboxylic acid and, optionally, (iii) another copolymerizable vinyl monomer.